

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;
moving a gate across the slot to open and close the slot, whereby when the slot is open granules fall from the hopper, and when the slot is closed granules are prevented from falling from the hopper;

detecting the speed of the substrate; and

controlling the extent of opening of the slot by the gate to meter the granules falling from the hopper in response to the speed of the substrate;

wherein the step of controlling the extent of opening of the slot includes independently controlling: i) the speed of the movement of the gate, and ii) the extent of opening of the slot by the gate to meter the granules falling from the hopper.

2. (Cancelled)

3. (Original) The method according to claim 1, wherein the valve comprises one of a rotary valve, a slide valve, a fluted roll and a pneumatic valve.

4. (Original) The method according to claim 3, wherein the valve comprises a rotary valve.

5. (Original) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;
moving a gate across the slot to open and close the slot, whereby when the slot is open granules fall from the hopper, and when the slot is closed granules are prevented from falling from the hopper;

controlling the speed of the movement of the gate; and

independently controlling the extent of opening of the slot by the gate to meter the granules falling from the hopper.

6. (Original) The method of claim 5 in which the controlling of the extent of opening of the slot is done in response to the speed of the substrate.

7. (Currently Amended) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;
moving a gate across the slot to open and close the slot, whereby when the slot is open granules fall from the hopper, and when the slot is closed granules are prevented from falling from the hopper;

controlling the acceleration rate of the gate during the opening of the slot so that the acceleration rate does not exceed about 4 g (where g is the acceleration of gravity) and controlling the speed of the movement of the gate; and

independently controlling the extent of opening of the slot by the gate to meter the granules falling from the hopper.

8. (Original) The method of claim 7 in which the maximum acceleration rate of the gate during the opening of the slot is about 3 g.

9. (Original) The method of claim 7 in which the maximum acceleration rate of the gate during the opening of the slot is about 2 g.

10. (Cancelled)

11. (Currently Amended) The method of claim 10 7 in which the controlling of the extent of opening of the slot is done in response to the speed of the substrate.

12. (Original) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;
moving a gate across the slot to open and close the slot, whereby when the slot is open granules fall from the hopper, and when the slot is closed granules are prevented from falling from the hopper;

controlling the acceleration of the gate during one of the opening of the slot and the closing of the slot, so that the acceleration rate is positive during a first portion of the one of the opening and closing of the slot, and the acceleration rate is approximately zero during a second portion of the one of the opening and closing of the slot.

13. (Original) The method of claim 12 including controlling the acceleration rate of the gate during the one of the opening and closing of the slot so that the acceleration rate does not exceed about 4 g.

14. (Original) The method of claim 13 in which the maximum acceleration rate of the gate during the one of the opening and closing of the slot does not exceed about 3 g.

15. (Original) The method of claim 14 in which the maximum acceleration rate of the gate during the one of the opening and closing of the slot does not exceed about 2 g.

16. (Original) The method of claim 13 in which the velocity of the gate during the second portion of the one of the opening and closing of the slot is within the range of from about 10 to about 130 ft./min.

17. (Original) The method of claim 16 which the velocity of the gate during the second portion of the one of the opening and closing of the slot is greater than about 90 ft./min.

18. (Original) The method of claim 16 which the velocity of the gate during the second portion of the one of the opening and closing of the slot is less than about 30 ft./min.

19. (Cancelled)

20. (Currently Amended) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;

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moving a gate across the slot to open and close the slot, whereby when the slot is open granules fall from the hopper, and when the slot is closed granules are prevented from falling from the hopper;

detecting the speed of the substrate; and

controlling one of the group consisting of the extent of opening of the slot by the gate to meter the granules falling from the hopper in response to the speed of the substrate; the acceleration rate of the gate; and the speed of the movement of the gate and the extent of opening of the slot by the gate to meter the granules falling from the hopper; wherein the step of controlling comprises controlling the extent of opening of the slot includes independently controlling: i) the speed of the movement of the gate, and ii) the extent of opening of the slot by the gate to meter the granules falling from the hopper.

21. (Cancelled)

22. (Currently Amended) The method of claim 21 20 in which the controlling of the extent of opening of the slot is done in response to the speed of the substrate.

23. (Original) The method according to claim 20, wherein the valve comprises one of a rotary valve, a slide valve, a fluted roll and a pneumatic valve.

24. (Original) The method according to claim 23, wherein the valve comprises a rotary valve.

25. (Original) The method according to claim 24, further comprising controlling the acceleration of the gate during the opening of the slot so that the acceleration rate is positive during a first portion of the opening of the slot, and the acceleration rate is approximately zero during a second portion of the opening of the slot.

26. (Original) The method of claim 25 including controlling the acceleration rate of the gate during the opening of the slot so that the acceleration rate does not exceed about 4 g.

27. (Original) The method of claim 26 in which the maximum acceleration rate of the gate during the opening of the slot is about 2 g.

28. (Original) The method of claim 27 in which the velocity of the gate during the second portion of the opening of the slot is within the range of from about 10 to about 130 ft./min.

29. (Original) The method of claim 28 which the velocity of the gate during the second portion of the opening of the slot is greater than about 90 ft./min.

30. (Original) The method of claim 28 which the velocity of the gate during the second portion of the opening of the slot is less than about 30 ft./min.

31. (Original) A method of depositing granules onto a moving substrate comprising:

providing a hopper for containing granules, the hopper having a discharge slot;

providing a means for starting and stopping flow from the slot, whereby when granules fall from the hopper and are prevented from falling from the hopper;

detecting the speed of the substrate; and

controlling one of the group consisting of:

the extent of opening of the slot by the gate to meter the granules falling from the hopper in response to the speed of the substrate;

the acceleration rate at which the flow is started and stopped; and

the speed of the movement of the means for starting and stopping flow gate and the extent of opening of the slot by the gate to meter the granules falling from the hopper.

32. (Original) The method of claim 31 wherein the step of controlling comprises controlling the extent of opening of the slot and independently controlling the speed of the movement of the gate and the extent of opening of the slot by the gate to meter the granules falling from the hopper.

33. (Original) The method of claim 32 wherein the step of controlling further

comprises controlling the acceleration rate at which the flow is started and stopped.

34. (Original) The method according to claim 33, wherein the means for starting and stopping flow from the slot comprises a rotary valve.

35. (Currently Amended) The method according to claim 31, wherein the step of controlling further comprises producing a blend drop at a low speed as low as about 200 ft/min. and a substantially similar blend drop at a high speed as high as about 1,000 ft/min.

36. (Original) The method according to claim 35, wherein the step of controlling further comprises producing a first blend drop at a low speed and a second blend drop at a high speed, wherein said first blend drop and said second blend drop are substantially similar in appearance.

37. (Original) The method according to claim 36, wherein the step of controlling comprises producing a substantially constant blend drop density at said high speed and said low speed.

38. (Original) The method according to claim 37, wherein the blend drop density falling onto said coated sheet is between 1.0 and 1.6 grams/square inch at both said high speed and said low speed.

39. (Original) The method according to claim 36, wherein the step of controlling comprises producing a said first blend drop with a first length and said second blend drop with a second length, wherein said second length is substantially the same as the first length.

40. (Original) The method according to claim 36, wherein the step of controlling comprises producing a said first blend drop with a first leading edge and first trailing edge and said second blend drop with a second leading edge and second trailing edge, wherein said first and second leading edges are substantially the same and said first and second trailing edges are substantially the same.